

Gerald Gentleman Station

**Multi-Pollutant Controls Equipment
(MPCE) Project Update**

GGs Town Hall Meeting
September 2011

GGG MPCE Project Update

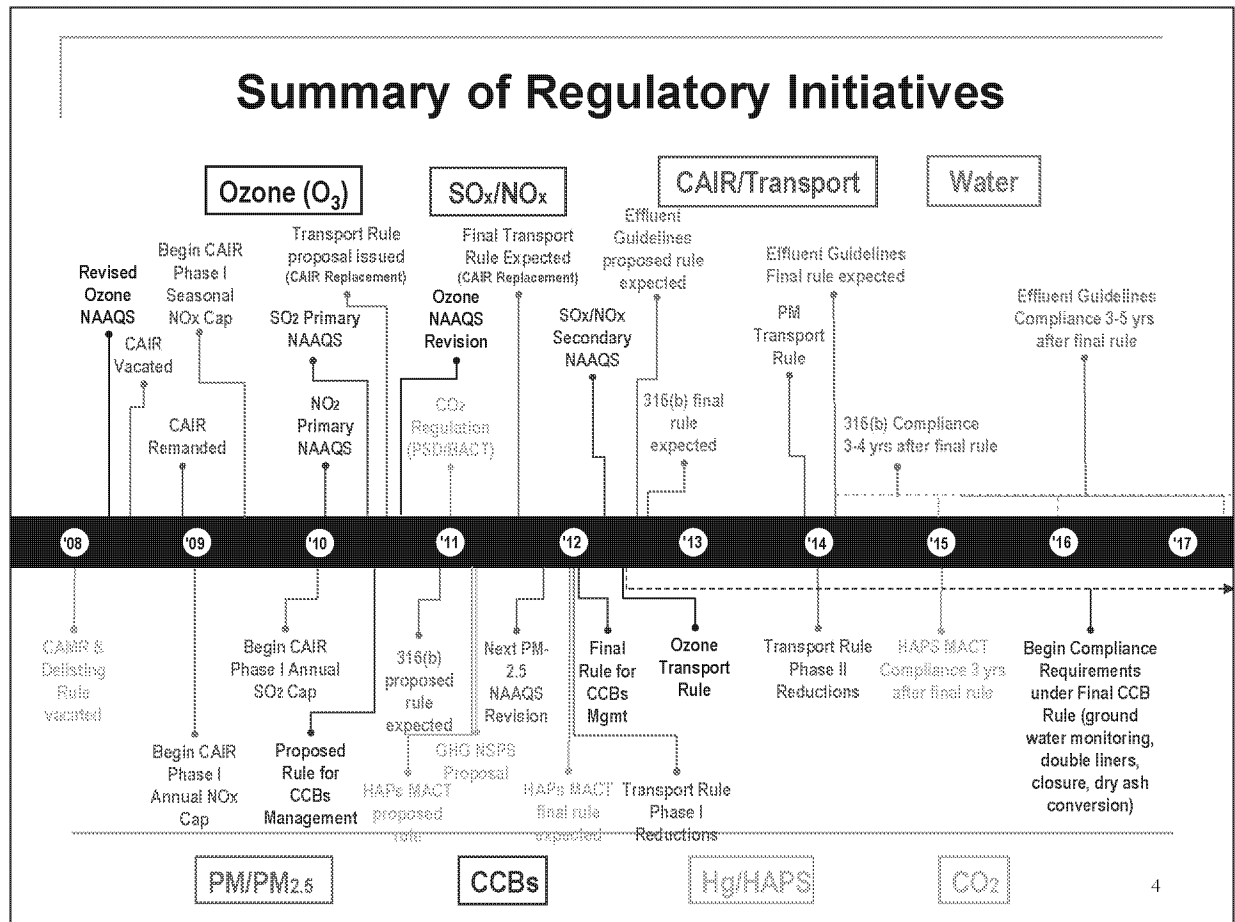
Topics for Today

- **Background on GGS Multi-Pollutant Control Equipment (MPCE) Project**
- **Summary of Regulatory Initiatives**
 - **Focus on Cross-State Air Pollution Rule (CSAPR)**
- **Status of GGS Combustion Optimization**
- **Status of GGS Other MPCE Work**

GGG MPCE Project Update

Background

- GGS MPCE Project began in 2007
 - Purposes:
 - Determine impact on capital budget and time to implement
 - Determine impact to operations and maintenance
 - Project put on hold as end of 2009
- GGS Combustion Optimization Project was also being pursued
 - Related to, but separate from, MPCE
 - Regional Haze Rule was the driver
 - Nebraska State Implementation Plan still not approved



This is a summary of the regulatory initiatives that affect our existing and any new facilities.

Ozone, SO₂/NO_x, CAIR/Transport Rule, Water

Note EFFLUENT GUIDELINES

Haven't changed since 1986 – long overdue

will regulate scrubber waste for the first time

moving from technology based standards to water quality based standards

i.e., Chlorine 0.20 mg/l to 0.019 mg/l, a ten fold decrease.

Mike Linder, Director of the NDEQ, recently said water is the next big thing!

For example, water regulations may control your emissions, due to deposition.

PM₁₀ and PM_{2.5}, Coal Combustion byproducts, Mercury and other HAPS, and Finally CO₂

We'll discuss these rules in the following slides.

Keep in mind - All these rules are in the pipeline...

The regulatory express moves on...

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Cross-State Air Pollution Rule

- Proposed rule issued in July 2010 as CAIR replacement
 - Included Nebraska for the first time
 - Contained limits for SO₂ and NO_x
 - Limits were established thorough “allowances”
 - Utilized a “cap and trade” provision
 - Limits given were challenging, but manageable

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Cross-State Air Pollution Rule

- **Final Cross-State Air Pollution Rule (CSAPR) issued in July 2012**
 - Final rule differed significantly from proposed rule
 - Number of “allowances” was greatly reduced
 - For example, Unit 2 allowance budget was reduced to about ½ of what it was in the proposed rule
 - Rule goes into effect January 1, 2012
 - Cannot emit in excess of allowances, with variances, at the end of 2012 and every year, thereafter

GGs MPCE Project Update

Status of Combustion Optimization

- A logical first step for any new MPCE
 - Capital Project C/3115 has been under development for implementation in 2014
 - For Unit 2: New low NOx Burners and OFA
 - For both units:
 - Pulverizer modifications
 - New fuel/air flow measuring and control equipment
 - New flue gas monitoring instruments (O₂, CO, NO_x)
 - Total cost estimate for C/3115 was \$39.3 million
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GGs MPCE Project Update

Status of Combustion Optimization

- CSAPR changed our plans
 - Much more stringent limits
 - Very short time to take action
- Board declared an emergency in August
 - Covers “external spend” of \$35.5 million
 - Sealed bidding statute does not apply
- Legal Action against CSAPR
 - Attorney General Bruning gathering support for lawsuit
 - Will do Optimization project regardless of outcome

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Status of Combustion Optimization

■ Current Activities

- Negotiations are underway with B&W to furnish and install 48 burners and OFA for Unit 2
 - Based on new Airejet burner design
 - Includes new igniters, scanners, and scanner air fans
 - Will keep fuel gas but remove fuel oil systems
 - OFA design is a challenge due to structural steel and cable tray interferences
- A substantial amount of structural steel, grating, and hoist way doors will be necessary. Must be installed by January 2012

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Status of Combustion Optimization

■ Current Activities

- Several pulverizer modifications are being pursued
 - New classifier blade design
 - Modification to the classifier outlet
 - New primary and seal air flow venturis
 - New orifices for the coal conduits
- In summary, much of this work will be performed by GGS personnel on an expedited basis which will no doubt affect everyone. Your patience and understanding would be greatly appreciated!!!

GGG MPCE Project Update

Status of other MPCE Work

- Based on “Train Wreck” chart, re-initiated work with S&L
- Assessing impacts of various regulations on GGS and SS
- Continuing with engineering and permitting activities for MPCE for GGS
- Goal is to be prepared by end of 2011 to take further action, if necessary

GGS MPCE Project Update

Current Status

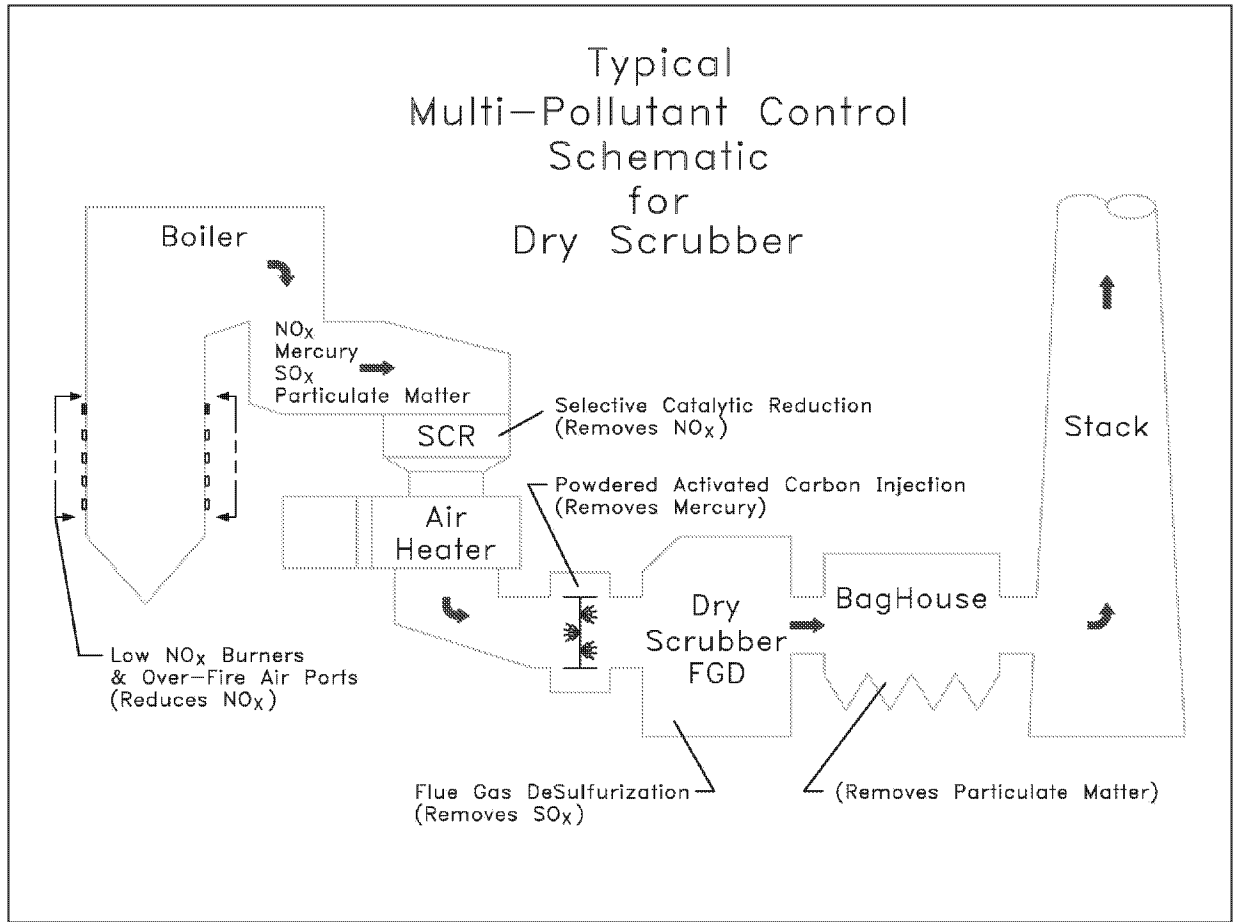
- Previous project cost estimates for GGS have been updated
 - Scrubbers: Approximately \$1 billion
 - SCR equipment: Approximately \$500 million
- Per current schedule (subject to change), equipment tie-ins are planned for:
 - 2016 for Unit 2
 - 2017 for Unit 1

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MPCE Overview

For

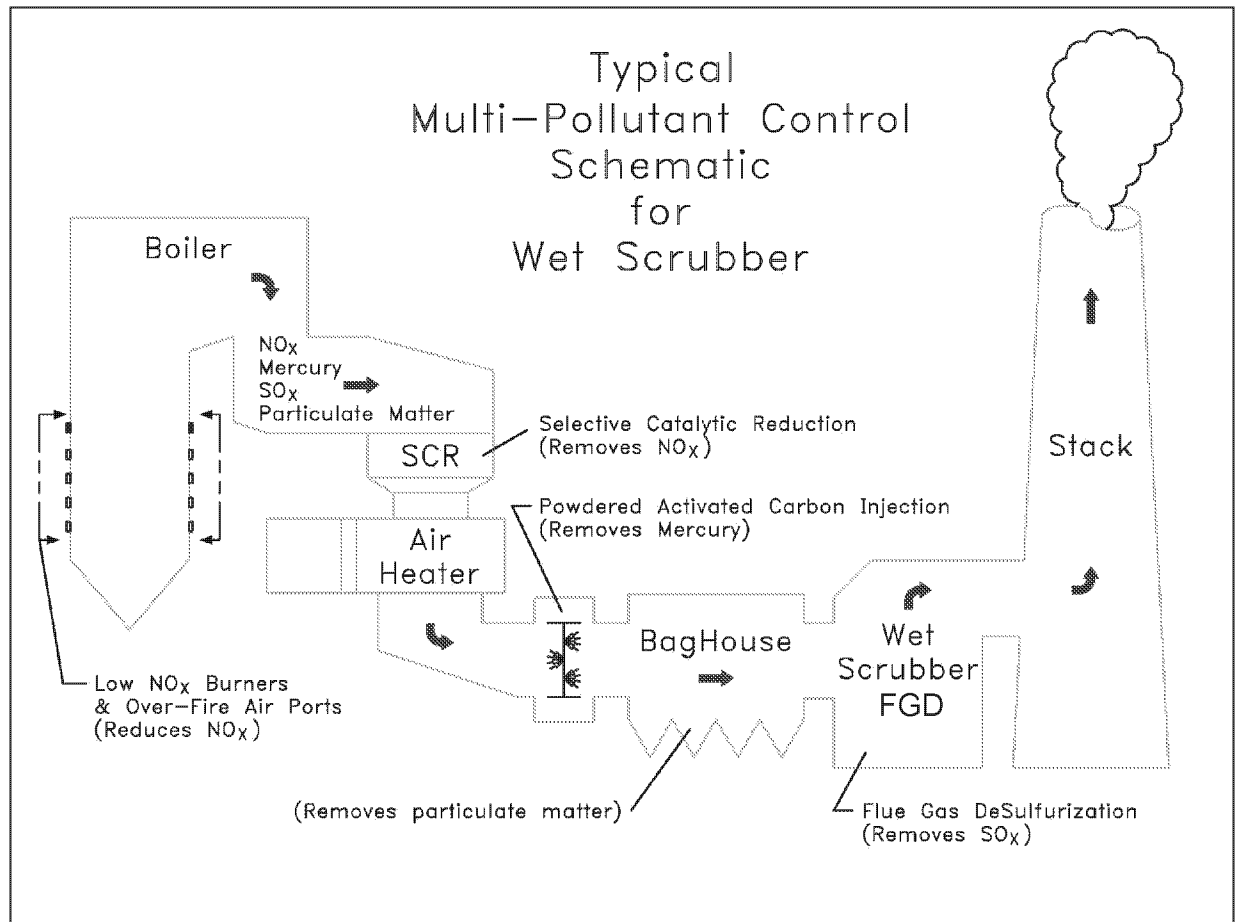
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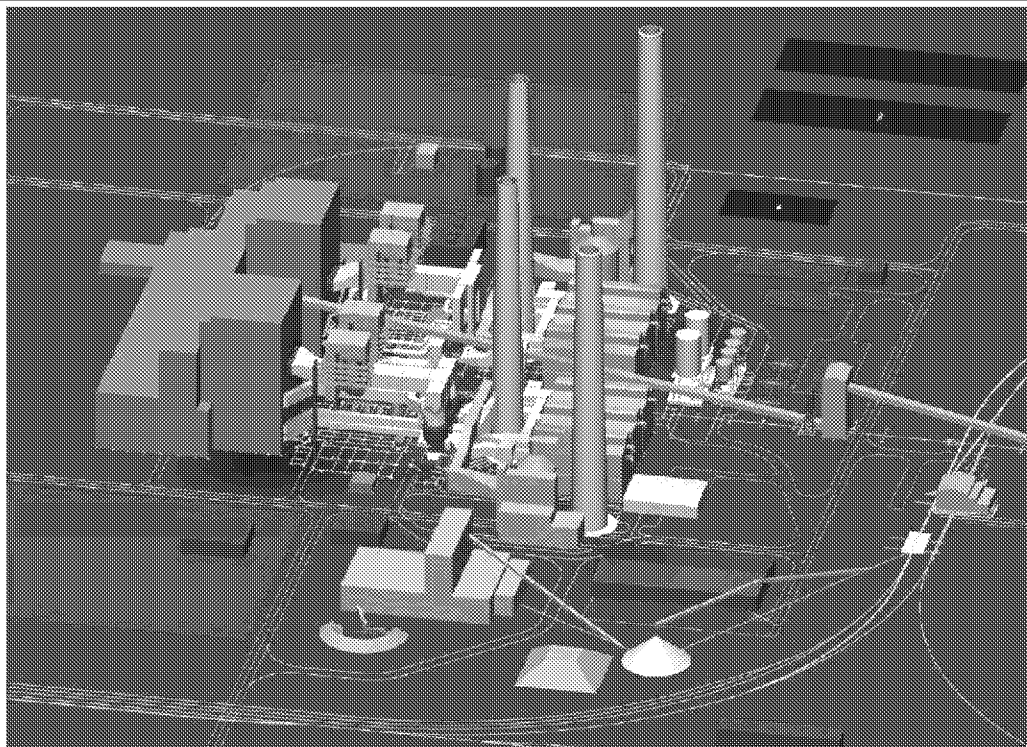




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Questions?